



U.S. Department  
of Transportation  
**Federal Aviation  
Administration**

# Advisory Circular

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<b>Subject:</b>	Change 3 to Specification for Economy Approach Lighting Aids	<b>Date:</b>	1/26/99	<b>AC No.:</b>	150/5340-14B
		<b>Initiated by:</b>	AAS-200	<b>Change:</b>	3

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**1. PURPOSE.** This change updates the location and height requirements for runway end identifier lights (REILS).

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4. CONFIGURATIONS.

a. MALSF.

- (1) Provide a configuration of steady burning and flashing lights arranged symmetrically about and along the extended runway centerline as shown in Figure 1. Begin the system approximately 200 feet from the runway threshold and extend it to an approximate 1400-foot overall length.
- (2) Use seven light stations with five steady burning lights at each station. If required, provide one flashing light at each of the three outermost stations. At the station 1,000 feet from the runway threshold, use two additional bars (one of each side of the centerline bar) each with five steady burning lights.
- (3) All lights in the system emit white light. Provide intensity control for steady burning lights. Flashing lights have no intensity control.

b. REIL. **Provide two flashing lights near the end of the runway as shown in Figure 2. The optimum location of the lights shall be 40 feet from the runway edge and in line with the existing runway threshold lights. The light units may be located laterally up to 75 feet from the runway edge and longitudinally 40 feet downwind or 90 feet upwind from the runway threshold. When possible, the two light units shall be equidistant from the runway centerline. When location adjustments are necessary the difference in the distance of the two lights to the centerline shall not exceed 10 feet. Each light unit shall be a minimum of 40 feet from the edge of taxiways and runways. The elevation of both units shall be within 3 feet of a horizontal plane through the runway centerline, with the maximum height above ground limited to 3 feet. When the centerline elevation varies the centerline point in line with the two units shall be used to measure the centerline elevation. Both light units shall be within 10 feet of a line perpendicular to the runway centerline.** Orient the beam axis of unbaflled unit 15 degrees outward from a line parallel to the runway and inclined at an angle 10 degrees above the horizontal. If this standard setting is operationally objectionable, provide optical baffles and orient the beam axis of the unit 10 degrees outward from a line parallel to the runway centerline and inclined at an angle of 3 degrees above the horizontal. Details pertaining to baffles are contained in Specification L-849. The REIL's emit white light and have no intensity control.

c. 2-Box VASI. Provide two light units located 50 feet from the left runway edge when the optical system is viewed from the approach zone. The light units are installed in a line parallel with the runway edge. Each light unit emits a two-color (red and white) light beam. When the light units are properly aimed, the optical system provides visual approach slope information. When airport paved surfaces prevent the normal left side installation or when significant cost reduction can be realized, install the system on the right side of the runway and publish this fact in the Airman's Information Manual. See Figure 3 for aiming criteria.

# NOTES

1. THE OPTIMUM LOCATION FOR EACH LIGHT UNIT IS IN LINE WITH THE RUNWAY THRESHOLD AT 40 FT FROM THE RUNWAY EDGE.
2. A 90 FT UPWIND AND A 40 FT DOWNWIND LONGITUDINAL TOLERANCE IS PERMITTED FROM THE RUNWAY THRESHOLD IN LOCATING THE LIGHT UNITS.
3. THE LIGHT UNITS SHALL BE EQUALLY SPACED FROM THE RUNWAY CENTERLINE. WHEN ADJUSTMENTS ARE NECESSARY THE DIFFERENCE IN THE DISTANCE OF THE UNITS FROM THE RUNWAY CENTERLINE SHALL NOT EXCEED 10 FT.
4. THE BEAM CENTERLINE (AIMING ANGLE) OF EACH LIGHT UNIT IS AIMED 15° OUTWARD FROM A LINE PARALLEL TO THE RUNWAY CENTERLINE AND INCLINED AT AN ANGLE 10° ABOVE THE HORIZONTAL. IF ANGLE ADJUSTMENTS ARE NECESSARY, PROVIDE AN OPTICAL BAFFLE AND CHANGE THE ANGLES TO 10° HORIZONTAL AND 3° VERTICAL.
5. LOCATE THE REIL EQUIPMENT A MINIMUM DISTANCE OF 40 FT FROM OTHER RUNWAYS AND TAXIWAYS.
6. IF REILS ARE USED WITH VASI OR PAPI-2, INSTALL REILS AT 75 FT FROM THE RUNWAY EDGE. WHEN INSTALLED WITH OTHER FACILITIES REILS SHALL BE INSTALLED AT 40 FT FROM THE RUNWAY EDGE.
7. THE ELEVATION OF BOTH UNITS SHALL BE WITHIN 3 FT OF THE HORIZONTAL PLANE THROUGH THE RUNWAY CENTERLINE.

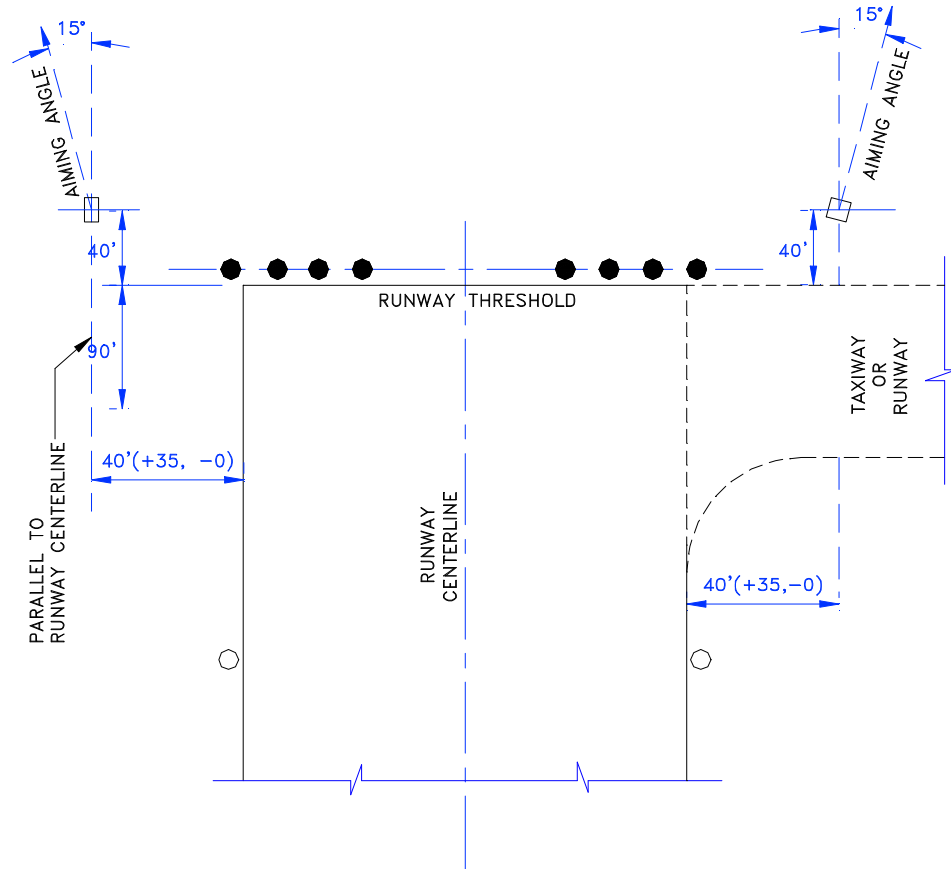
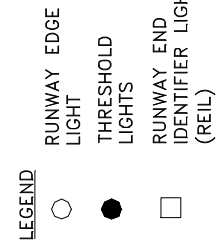
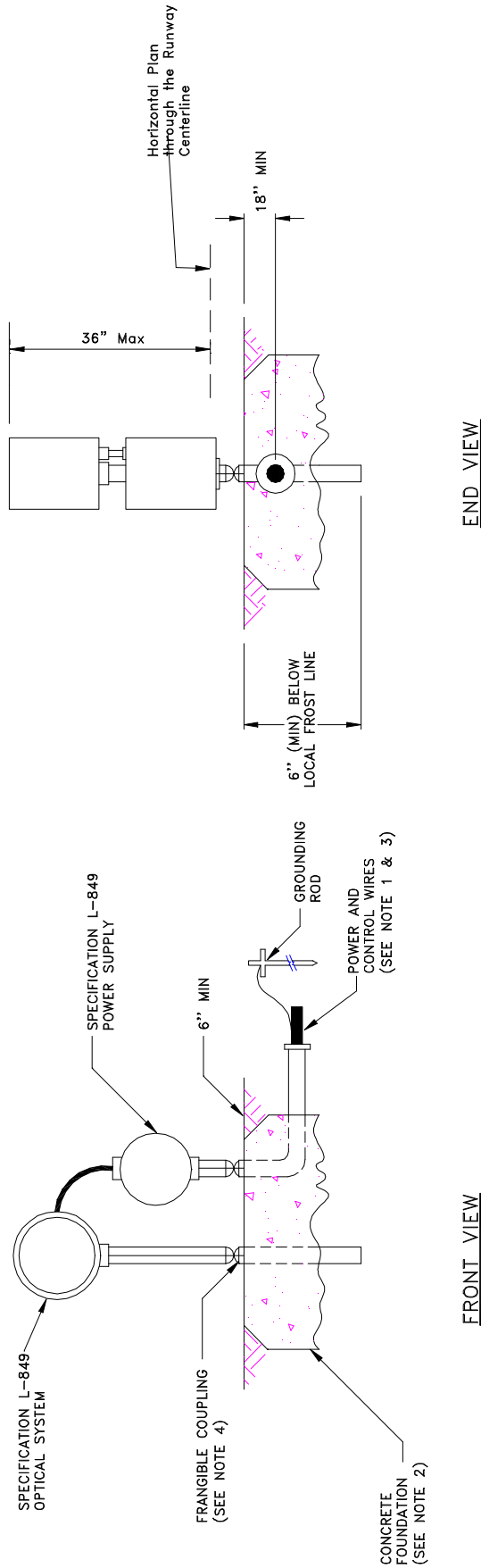


FIGURE 2. TYPICAL LAYOUT FOR RUNWAY END IDENTIFIER LIGHTS (REIL'S)



**NOTES**

1. THE INSTALLATIONS SHALL CONFORM TO THE APPLICABLE SECTIONS OF THE NATIONAL ELECTRICAL CODE AND LOCAL CODES.
2. THE SIZE OF THE CONCRETE FOUNDATION SHOULD BE INDICATED ON THE CONSTRUCTION PLANS.
3. THE TOP OF THE CONCRETE FOUNDATION SHOULD BE SLOPED TO DRAIN TOWARD THE EDGE OF THE FOUNDATION. THE GROUND SURROUNDING SHOULD BE NO MORE THAN THREE INCHES BELOW THE TOP OF THE FOUNDATION.
4. THE INSTALLATION OF POWER AND CONTROL WIRES SHALL BE IN ACCORDANCE WITH THE APPLICABLE SECTIONS OF ITEM L-108 OF STANDARD SPECIFICATIONS FOR CONSTRUCTION OF AIRPORTS.
5. PROVIDE FRANGIBLE COUPLINGS FOR THE LIGHT UNIT AND SUPPLY. THE OUTSIDE DIAMETER OF THE SUPPORTS CAN BE 2.197-INCHES, OR 2.375-INCHES.

**FIGURE 13. TYPICAL INSTALLATION DETAILS FOR RUNWAY END IDENTIFIER LIGHTS (REIL'S)**